11 Publication number:

**0 308 826** A3

## (12)

## **EUROPEAN PATENT APPLICATION**

(21) Application number: 88115233.4

(i) Int. Cl.5: H03M 3/02, H03G 9/02

2 Date of filing: 16.09.88

3 Priority: 25.09.87 US 101369

(43) Date of publication of application: 29.03.89 Bulletin 89/13

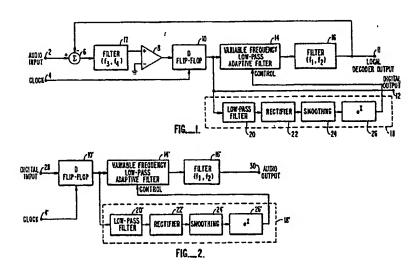
Designated Contracting States:
 AT BE CH DE ES FR GB GR IT LI LU NL SE

Date of deferred publication of the search report: 05.09.90 Bulletin 90/36

- Applicant: DOLBY LABORATORIES LICENSING CORPORATION
   100 Potrero Avenue
   San Francisco California 94103(US)
- ② Inventor: Mandell, Douglas Evan 625 Olima Street Sausalito Cal. 94965(US)
- Representative: Blumbach Weser Bergen Kramer Zwirner Hoffmann Patentanwälte Sonnenberger Strasse 100 D-6200 Wiesbaden(DE)
- Adaptive-filter single-bit digital encoder and decoder and adaptation control circuit responsive to bitstream loading.
- The An adaptive single-bit encoder and decoder has its adaptive function determined by dynamically dividing the message frequency band into delta-sigma and delta modulation regimes of operation. In a practical embodiment this is accomplished by varying the corner frequency of a variable-frequency low-pass filter (14, 14) in a leaky integrator so that below the corner frequency the operation is that of delta-sigma modulation and above the corner fre-

quency the operation is that of delta modulation. An adaptation control circuit (18, 18') removes the clock signal component from the encoded bit stream to provide an analog signal representative of bit stream information or loading for use in generating the control signal. The analog signal is peak rectified (22, 22'), smoothed (24, 24'), and (optionally) non-linearly processed (26, 26') to provide the control signal.





**BEST AVAILABLE COPY** 

## **EUROPEAN SEARCH REPORT**

EP 88 11 5233

Application number

	DOCUMENTS CONS			
Category		th indication, where appropriate, vant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL-1)
A	TECHNOLOGY, vol.	pages 149-157, New		H 03 M 3/02 H 03 G 9/02
	* Page 151, left paragraphs 3-5		1,6,	
A	no. 10, October 1920, Stevenage, A.A. CARTMALE et the performance	al.: "Calculating		
		t-hand column, - right-hand ragraph; figure 2 *	1,6, 7,16, 21,22	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	no. 186 (E-84)(8 1981;	OF JAPAN, vol. 5, 58), November 25, 1 (NIPPON DENSHIN 1-09-1981		H 03 M H 03 G H 03 H
	* Abstract; figu	res *	1-4, 16-19	
			-	
	Apparence manufacturence and a	PROCESSOR OF STATE OF		
<u> </u>	Place of search THE HAGUE	Date of completion of the search 05-02-1990		Examiner BLAAS

X : particularly relevant if taken alone
 Y : particularly relevant if combined with another document of the same category

: technological background : non-written disclosure A : technological backgrou O : non-written disclosure P : intermediate document

T: theory or principle underlying the invention
E: earlier patent document, but published on, or after the filing date
D: document cited in the application
L: document cited for other reasons

&: member of the same patent family, corresponding document



CLAIMS INCURRING FEES				
	一			
The present European patent application comprised at the time of filling more than ten claims.				
All claims fees have been paid within the prescribed time limit. The present European search report has been				
drawn up for all claims.				
Only part of the claims 'ees have been paid within the prescribed time fimit. The present Surobean search				
report has been drawn up for the first ten claims and for those claims for which claims fees have been baid.				
namely claims:				
No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.	- 1			
Grawl op for the martin craims.				
LACK OF HINTY OF INVENTION	$\dashv$			
X LACK OF UNITY OF INVENTION				
The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions,				
ramely:				
1 Claims 1-27, Adaptive A modulator in which the adaptive				
1. Claims 1-27: Adaptive A-modulator in which the adaptive function is obtained by changing the corner frequency				
of the integrator.	1			
2. Claims 28-32: Generation of control signals for adaptive				
delta-modulators in general.				
•				
•				
•				
All further search fees have been paid within the fixed time limit. The present European search report has				
been drawn up for all claims.				
Only part of the further search fees have been paid within the fixed time limit. The present European search				
report has been drawn up for those parts of the European patent application which relate to the inventions in				
respect of which search fees have been paid,				
namely claims:				
None of the further search fees has been paid within the fixed time limit. The present European search report				
has been drawn up for those parts of the European patent application which relate to the invention first				
mentioned in the claims.				
I namely claims: 1-27				